## AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning at page 20, line 13 with the following paragraph.

"In some embodiments, the modeling environment 110 includes a knowledge base 350 that aids construction of a model. In some of these embodiments, the knowledge base 350 contains models for various reactions, e.g. glycolysis. In these embodiments, when a user begins to input reactions consistent with a model for glycolysis, the knowledge base 350 may enter the remaining reactions for the user. Alternatively, the knowledge base 350 may offer different models of the reaction to the user. In some of these embodiments, the offered models represent the target reaction with varying levels of detail. In other embodiments, the knowledge base 350 may insert parameters or indications of reversibility for entered reactions. The knowledge base 350 may also provide assistance to a user inputting a block diagram representation of a chemical or biochemical reaction. For example, the knowledge base 350 may prevent a user manufactured by connecting blocks inconsistent with the modeled reaction. Examples of publicly-available databases that may be used to facilitate generation of models include the Swissprot database ~~(http://us.expasy.org/sprot)~~, National Center for Biotechnology Information (NCBI) database ~~(http://www.ncbi.nlm.nih.gov)~~, the Protein Data Bank ~~(http://www.rcsb.org/pdb)~~, and Kyoto Encyclopedia of Genes and Genomes (KEGG) ~~(http://www.genome.ad.jp/kegg/kegg2.html)~~. Alternatively, the user may provide private databases to act as a knowledge base 350 for facilitating creation of models.

Please replace the paragraph beginning at page 6, line 12 with the following paragraph.

"The central processing unit 202 is any logic circuitry that responds to and processes instructions fetched from the main memory unit 204. In many embodiments, the central processing unit is provided by a microprocessor unit, such as: the 8088, the 80286, the 80386, the 80486, the ~~Pentium~~PENTIUM®, ~~Pentium Pro~~PENTIUM® PRO, the ~~Pentium~~PENTIUM® II, the ~~Celeron~~CELERON®, or the ~~Xeon~~XEON® processor, all of which are manufactured by Intel Corporation of Mountain View, California; the 68000, the 68010, the 68020, the 68030, the 68040, the ~~PowerPC~~POWERPC® 601, the ~~PowerPC~~POWERPC® 604, the ~~PowerPC~~POWERPC® 604e, the MPC603e, the MPC603ei, the MPC603ev, the MPC603r, the MPC603p, the MPC500, the MPC740, the MPC745, the MPC750, the MPC755, the MPC 5500,

the MPC7400, the MPC7410, the MPC7441, the MPC7445, the MPC7447, the MPC7450, the MPC7451, the MPC7455, the MPC7457 processor, all of which are manufactured by Motorola Corporation of Schaumburg, Illinois; the ~~Crusoe~~CRUSOE TM5800, the ~~Crusoe~~CRUSOE TM5600, the ~~Crusoe~~CRUSOE TM5500, the ~~Crusoe~~CRUSOE TM5400, the ~~Efficeon~~EFFICEON TM8600, the ~~Efficeon~~EFFICEON TM8300, or the ~~Efficeon~~EFFICEON TM8620 processor, manufactured by Transmeta Corporation of Santa Clara, California; the RS/6000 processor, the RS64, the RS 64 II, the P2SC, the POWER3, the RS64 III, the POWER3-II, the RS 64 IV, the POWER4, the POWER4+, the POWER5, or the POWER6 processor, all of which are manufactured by International Business Machines of White Plains, New York; or the AMD ~~Opteron~~OPTERON, the AMD ~~Athalon~~ATHALON 64 FX, the AMD ~~Athalon~~ATHALON, or the AMD ~~Duron~~DURON processor, manufactured by Advanced Micro Devices of Sunnyvale, California."

Please replace the paragraph beginning at page 7, line 20 with the following paragraph.

In the embodiment shown in FIG. 2A, the processor 202 communicates with various I/O devices 230 via a local system bus 220. Various busses may be used to connect the central processing unit 202 to the I/O devices 230, including a VESA VL bus, an ISA bus, an EISA bus, a MicroChannel Architecture (MCA) bus, a PCI bus, a PCI-X bus, a PCI-~~Express~~EXPRESS® bus, or a NuBus. For embodiments in which the I/O device is a video display, the processor 202 may use an Advanced Graphics Port (AGP) to communicate with the display. FIG. 2B depicts an embodiment of a computer system 200 in which the main processor 202 communicates directly with I/O device 230b via HyperTransport, Rapid I/O, or ~~InfiniBand~~INFINIBAND®. FIG. 2B also depicts an embodiment in which local busses and direct communication are mixed: the processor 202 communicates with I/O device 230a using a local interconnect bus while communicating with I/O device 230b directly.

Please replace the paragraph beginning at page 8, line 15 with the following paragraph.

"General-purpose desktop computers of the sort depicted in FIGs. 2A and 2B typically operate under the control of operating systems, which control scheduling of tasks and access to system resources. Typical operating systems include: MICROSOFT WINDOWS, manufactured by Microsoft Corp. of Redmond, Washington; ~~MacOS~~MACOS, manufactured by Apple

Computer of Cupertino, California; OS/2, manufactured by International Business Machines of Armonk, New York; and ~~Linux~~LINUX, a freely-available operating system distributed by Caldera Corp. of Salt Lake City, Utah, among others."

Please replace the paragraph beginning at page 8, line 22 with the following paragraph.

"In still other embodiments the computers may operate under the control of real-time operating systems such as AMX, ~~KwikNet~~KWIKNET®, ~~KwikPeg~~KWIKPEG (all manufactured by KADAK Products Ltd.), C EXECUTIVE® (manufactured by JMI Software Systems, Inc.), CMX-RTX (manufactured by CMX Systems, Inc.), ~~DeltaOS~~DELTAOS (manufactured by CoreTek Systems, Inc.), ~~eCos~~ECOS (manufactured by Red Hat, Inc.), ~~embOS~~EMBOS® (manufactured by SEGGER Microcontroller Systeme GmbH), ~~eRTOS~~ERTOS (manufactured by JK Microsystems, Inc.), ETS (manufactured by VenturCom), EYRX (manufactured by Eyring Corporation), INTEGRITY (manufactured by Green Hills Software, Inc.), ~~INtime~~INTIME® real time extension to ~~Windows~~WINDOWS® (manufactured by TenAsys Corporation), IRIX (manufactured by SGI), ~~iRMX~~IRMX (manufactured by TenAsys Corporation), ~~Jbed~~JBED (manufactured by esmertec, inc.), ~~LynxOS~~LYNXOS® (manufactured by LynuxWorks), MQX (manufactured by Precise Software Technologies Inc), Nucleus PLUS (Accelerated Technology, ESD Mentor Graphics), On Time RTOS-32 (manufactured by On Time Informatik GmbH), OS-9 (manufactured by Microware Systems Corporation), OSE (manufactured by OSE Systems ), PDOS (manufactured by Eyring Corporation), PSX (manufactured by JMI Software Systems, Inc.), QNX ~~Neutrino~~NEUTRINO (manufactured by QNX Software Systems Ltd.), QNX4 (manufactured by QNX Software Systems Ltd.), REDICE-~~Linux~~LINUX (manufactured by REDSonic, Inc.), ~~RTLinux~~RTLINUX (manufactured by Finite State Machine Labs, Inc.), RTX 5.0 (manufactured by VenturCom), ~~Portos~~PORTOS (manufactured by Rabih Chrabieh), ~~smx~~SMX (manufactured by Micro Digital, Inc.), ~~SuperTask!~~SUPERTASK (manufactured by U S Software), ~~ThreadX~~TREADX (manufactured by Express Logic, Inc.), ~~Treck~~TRECK AMX (manufactured by Elmic Systems USA, Inc.), ~~Treck~~TRECK ~~MicroC/OS-II~~MICROC/OS-II (manufactured by Elmic Systems USA, Inc.), ~~TronTask!~~TRONTASK (manufactured by U S Software), ~~TTPos:~~TTPOS (manufactured by TTTech Computertechnik AG), ~~Virtuoso~~VIRTUOSO (manufactured by Eonic Systems), ~~VxWorks~~VXWORKS 5.4 (manufactured by Wind River), SCORE, DACS and TADS (all manufactured by DDC-I),

~~Nimble~~NIMBLE - ~~the~~THE ~~SoC~~SOC RTOS(manufactured by Eddy Solutions), Nucleus (manufactured by Accelerated Technology), or ~~Fusion~~FUSION RTOS (manufactured by DSP OS, Inc.). In these embodiments the central processing unit 202 may be replaced by an embedded processor, such as the Hitachi SH7000, manufactured by Kabushiki Kaisha Hitachi Seisakusho, of Tokyo, Japan or the NEC V800, manufactured by NEC Corporation of Tokyo, Japan.